



OFFICE OF MILITARY
FACILITIES PROGRAM

NOV 08 2004

CALIFORNIA DEPARTMENT OF
TOXIC SUBSTANCES CONTROL

Full Service Remedial Action Contract

**Final 60% Construction Drawings
and Specifications
Phase III Remedial Design (On-Base)**

*Prepared for
Air Force Center for Environmental Excellence
Brooks City-Base, Texas
and
Air Force Real Property Agency
McClellan, California*

Contract F41624-03-D-8608, Task Order 62

November 2004



REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) MWH Americas, Inc. 3321 Power Inn Road, Suite 300 Sacramento CA 95826				8. PERFORMING ORGANIZATION REPORT NUMBER	
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13. SUPPLEMENTARY NOTES					
14. ABSTRACT This Final 60% design package presents the construction and electrical drawings, specifications, utility drawings, responses to comments from the 30% design, Myrtle Avenue topography and utility drawing, Phase III monitoring well and piezometer specifications, and response to comments from the Draft 60% design.					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Unlimited	18. NUMBER OF PAGES 225	19a. NAME OF RESPONSIBLE PERSON Mike Zabaneh
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER (Include area code) (916) 643-3672 ext. 258

INSTRUCTIONS FOR COMPLETING SF 298

1. REPORT DATE. Full publication date, including day, month, if available. Must cite at least the year and be Year 2000 compliant, e.g. 30-06-1998; xx-06-1998; xx-xx-1998.

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NOV 05 2004

OFFICE OF MILITARY
FACILITIES PROGRAM

NOV 08 2004

CALIFORNIA DEPARTMENT OF
PUBLICATIONS

MEMORANDUM FOR SEE DISTRIBUTION

FROM: AFRPA/DD-McClellan
3411 Olson Street
McClellan CA 95652-1003

SUBJECT: Groundwater Operable Unit (GWOU) Phase III 60% Design (On Base)
(DSR# 874-7)

1. Reference our letter dated 2 November 2004.
2. Attached is the final-60% design forwarded for your records and use.
3. If you have any questions, please contact Mike Zabaneh at (916) 643-3672 ext 258.

A handwritten signature in black ink, reading "Paul G. Brunner", is positioned above the typed name.

PAUL G. BRUNNER
Senior Environmental Representative

Attachments:

1. 60% Design
2. List of Pertinent Sites



DEPARTMENT OF THE AIR FORCE
AIR FORCE REAL PROPERTY AGENCY

NOV 02 2004

MEMORANDUM FOR SEE DISTRIBUTION

FROM: AFRPA/DD-McClellan
3411 Olson Street
McClellan CA 95652-1003

SUBJECT: Groundwater Operable Unit (GWOU) Phase III 60% Design (On Base)
(DSR# 874-7) (Reference EPA Region IX Letter, 26 October 2004)

1. The final 60% design will be mailed to you on or about 4 November 2004. Additional time was required to incorporate changes from our headquarters and to reproduce copies. The subject document has an assigned McClellan Deliverable Status Report (DSR) #874-7, is categorized as a "primary" document, and was due on 22 October 2004.
2. This document represents the final-intermediate design (60%) for the Phase III groundwater remedy ("on base" component) and is based on the Phase III Work Plan (DSR# 331), Phase III Sampling and Analysis Plan (SAP) (DSR# 355), and results for the Phase III data gap investigation as reported in the Data Gaps Investigation Technical Memorandum for the off base and on base efforts (DSR#s 762 and 876, respectively).
3. This Design, in conjunction with the Environmental Remedial Plan (ERP), will allow the Air Force to proceed with its groundwater restoration strategy for volatile organic compounds (VOCs). However, please note that the following wells, previously designated as "optional," are now deleted from the design because the remaining wells in the design will restore the groundwater at the plumes currently containing VOCs:

P3AEW1A	P3AEW14AB	P3BEW6A
P3AEW4B	P3AEW23AB	P3CEW4A
P3AEW5B	P3AEW25AB	P3CEW7A
P3AEW12AB	P3BEW5A	P3HEW3AB
P3AEW13AB	P3BEW6AB	
4. The Environmental Remedial Plan (DSR# 1435), which includes the Project Activities (Work Plan), Groundwater Management Plan, Emissions Control Plan, Site Preparation Plan, as well as rationale for the extraction well locations will be submitted under separate cover.
5. If you have any questions, please contact Mike Zabaneh at (916) 643-3672 ext 258.

PAUL G. BRUNNER
Senior Environmental Representative

DISTRIBUTION LIST

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Dept. of Toxic Substances Control Attn: Mr. Kevin Depies 8800 Cal Center Drive Sacramento CA 95826-3200	1
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CH2M Hill Attn: Mr. Andy Cramer 2485 Natomas Park Drive, Suite 600 Sacramento CA 95833	1
URS (c/o AFRPA/DD-McClellan) Attn: Ms. Stephanie Benedict 3411 Olson Street McClellan CA 95652-1003	1

LIST OF PERTINENT SITES
GWOU Phase III 60% On Base Design

WELL ID	OU	WIMS ID	Site ID	Site Name
P3AEW1AB	A	None	None	None
P3AEW1B	A	None	None	None
P3AEW2B	A	SD109	CS S-024	Depaint washrack
P3AEW3AB	A	SD101	PRL S-016	Sol./paint spray booths
P3AEW3B	A	None	None	None
P3AEW4AB	A	SS222	SA 067	Soil contamination
P3AEW5AB	A	WL159	PRL L-002	IWL
P3AEW6AB	A	SD102	PRL S-017	Repair shop/spray booths
P3AEW7AB	A	SD106	CS S-021	Degreaser/spray booths
P3AEW11AB	A	SS087	PRL S-002	Chemical warehouse
P3AEW15AB	A	LF025	PRL 025	Landfill
P3AEW17AB	A	SD112	CS S-027	Solvent recovery stills
P3AEW18AB	A	None	None	None
P3OBEW1AB	None	None	None	None
P3BEW1A	B	SD194	SA 016	Hangars/storage area
P3BEW1AB	B	None	None	None
P3BEW2A	B	SS300	SSA 002	Special Study Area
P3BEW4A	B	LF023	CS 023	Landfill
P3CEW1A	C	None	None	None
P3CEW2A	C	None	None	None
P3CEW3A	C	LF047	PRL 049	Possible landfill
P3CEW5A	C	WP063	CS 067	Landfill

WELL ID	OU	WIMS ID	Site ID	Site Name
P3GEW1AB	G	MY269	AOC G-5	Aircraft maintenance hangar
P3GEW1B	G	WL158	PRL L-001	Indus. wastewater line
P3GEW2B	G	None	None	None
P3GEW3AB	G	WL158	PRL L-001	Indus. wastewater line
P3HEW1AB	H	SS124	PRL S-039	Former aircraft maintenance area (Current museum site)
P3HEW2AB	H	None	None	None



5 November 2004

Mr. Al Weilbacher
HQ AFCEE/ERD
3300 Sidney Brooks
Brooks City-Base, TX 78235-5112

SUBJECT: Submission of Final 60% Construction Drawings and Specifications,
Phase III Remedial Design (On-Base)
Contract F41624-03-D-8608, Task Order 62
Former McClellan Air Force Base (AFB), California

Dear Mr. Weilbacher:

MWH Americas, Inc. (MWH) is pleased to submit the Final 60% Construction Drawings and Specifications for On-Base Phase III Remedial Design at the former McClellan AFB, California. This document has also been distributed based on the Memorandum for Distribution prepared by the Air Force Real Property Agency.

The 60% submittal includes the construction drawings, specifications, and Appendices completed to a 60% level of effort. The construction drawings and electrical drawings include plans and layouts, process and instrumentation diagrams, and major equipment and material selection. The specifications in the construction submittal are complete for project-specific requirements. Appendices include the 60% Draft Design (On-base) Response to Comments.

The original number of extraction and monitoring wells and piezometers have been reduced from the original Final GWOU Phase III Sample and Analysis Plan, dated January 2003 for the Phase III Expansion prepared by CH2M Hill. Modifications include changing the well locations to better accommodate contaminant capture, deleting wells that were below MCL's, and deferring wells to the On-Base phase due to lack of funding.

Should you have any questions or comments, please contact me at (916) 418-8251 or Kurt Condie at (916) 418-418-8374.

Sincerely,

MWH Americas, Inc.

A handwritten signature in black ink, appearing to read "Kurt Condie for".

John D. Scott, R.G., C.E.G.
Program Manager

Enclosure

cc: Distribution List
 Danielle Siebal, SAC-1
 Kurt Condie, SAC-1
 Dan Korb, SAC-1
 Steve Krueger, SAC-1
 File, SAC-1

FINAL
60% CONSTRUCTION DRAWINGS AND SPECIFICATIONS
PHASE III REMEDIAL DESIGN (ON-BASE)

FORMER McCLELLAN AIR FORCE BASE, CALIFORNIA

November 2004

Contract F41624-03-D-8608
Task Order 62

Prepared for:

Air Force Center for Environmental Excellence (AFCEE)
Brooks City-Base, Texas

Prepared by:

MWH Americas, Inc. (MWH)
Sacramento, California

MWH certifies that, to the best of its knowledge and belief, the technical data delivered herewith under contract F41624-03-D-8608 is complete, accurate, and complies with all requirements of the contract.

Certifying Official: Kurt Cordie for Date: 11/5/04
Program Manager

Approved By: Kurt Cordie Date: 11/5/04
Task Order Manager

Approved By: Dan Sine Date: 11/5/04
Quality Assurance Manager

Note: This document is proprietary, revision-controlled, and is intended strictly for use by AFCEE and MWH and its subcontractors in support of specific contractual responsibilities; copying and further dissemination in any manner is not permitted without written authorization by the MWH Remedial Program Manager, except as may be agreed between MWH and AFCEE in the terms and conditions of the applicable contract.

**FINAL
60% CONSTRUCTION DRAWINGS AND SPECIFICATIONS
PHASE III REMEDIAL DESIGN (ON-BASE)**

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SECTION 01000
GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 SCOPE

This section is a general section which applies to all sections. The work encompassed by this specification and noted on the drawings consists of furnishing all labor, equipment, and material unless otherwise stated, to accomplish the construction project.

1.2 INDEX

- 1.1 SCOPE
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- 1.3 SITE VISIT
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- 1.5 PROPRIETARY NAMES
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- 1.11 ENVIRONMENTAL PROTECTION
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- 1.15 SIGN
- 1.16 CONTRACTOR FURNISHED EQUIPMENT DATA
- 1.17 PATENT PROTECTION

1.3 SITE VISIT

Bidders are responsible for site investigation in accordance with General Provision entitled Site Investigation and Conditions Affecting Their Work (FAR 52.236-3).

If this project involves work in an existing facility, the Contractor is cautioned that this project may present problems which would not be encountered in new construction.

1.4 CONTRACT DRAWINGS AND SPECIFICATIONS

The Contractor must comply with the general provisions entitled Specifications and Drawings for Construction (FAR 52.236-21) and Contract Drawings, Maps, and Specifications (DOD FAR SUP 52.236-7002).

1.5 PROPRIETARY NAMES

Names indicated for colors, textures, patterns and other characteristics of materials or names identifying specific mechanical and electrical equipment are for selection only. Other manufacturers' materials and equipment are acceptable provided they closely resemble all specified salient characteristics and conform to all other requirements of those products mentioned by name.

1.6 CIVIL ENGINEERING EXCAVATION PERMIT

No excavation shall be done prior to receiving a Base Civil Engineering Excavation Permit. Permits will be obtained from the environmental department located at McClellan Parkway.

The Contractor shall start the permit process not less than 14 calendar days prior to scheduled start of construction.

Hand digging shall be required to locate utilities shown on the drawings, Excavation Permit, or 3 feet (1 meter) on either side of locations identified on the design drawings. Dig alert and geophysical will also be notified and performed for locating utilities.

Protection of existing utilities shall be provided in accordance with general provisions entitled Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements (FAR 52.236-9).

1.7 TESTING

Where specific tests are required by this contract, the Contractor shall notify the Project Engineer 24 hours prior to testing.

The Contractor shall turn in a test report, if required, to the Project Engineer not later than three calendar days following the test.

The Contractor shall not proceed with any work which would cover up, or otherwise render inaccessible, the work being tested until the work being tested has been approved by the Project Engineer.

1.8 WARRANTIES

This project shall be under warranty as set forth in the General Provision entitled Warranty of Construction (FAR 52.246-21).

1.9 WORK SCHEDULE

All work at McClellan Air Force Base shall be accomplished during normal working hours (0730 to 1600 Hrs) exclusive of Saturdays, Sundays, and holidays unless other times are approved by the Project Engineer, or otherwise stated in the contract. Coordinate the work schedule with the Project Engineer.

Planned utility outage and street closures: All utility outages and street closures shall be scheduled during off duty hours and weekends unless otherwise approved by the Project Engineer. All outages and street closures shall be scheduled as far in advance as possible with the Project Engineer and

in no case less than 7 calendar days before the outage or closure. The Contractor shall obtain in writing from the Project Engineer a statement or schedule giving the permissible times of utility outages or road closures for particular installations and the maximum time allowed for such outage. The Contractor shall strictly observe such schedules and will be held responsible for any violations.

1.10 ENVIRONMENTAL PROTECTION

The Contractor is required to adhere to all applicable state, federal, and Air Force regulations dealing with environmental management. These items include, but are not limited to, the following:

Vehicles: Vehicles and other powered equipment will meet local (Davis County) air quality regulations for emissions. They will be mechanically sound and have all seals, grease rings, and other containment systems in place to ensure against leakage. Drip pans will be maintained such that overflow and spills do no occur. No equipment maintenance including oil changes, filter replacements, or hydraulic equipment repair shall be performed on base.

Solid Waste: All solid waste will be collected and disposed of on a daily basis. There shall be no accumulation of solid waste unless properly containerized or put within a fenced area to prevent material being blown about by the wind. No liquids shall be disposed of in base dumpsters. This includes paints, oils, chemicals, compressed gas cylinders, or pesticides. Only dried paint cans will be allowed in dumpsters.

Hazardous Waste: All hazardous wastes such as sandblast media, chlorinated solvents, paint thinners, and fuels will be labeled and an inventory management system initiated to ensure timely removal and proper disposal. There will be no on-base disposal allowed, including use of drains (sanitary, storm, or industrial).

All drums shall be labeled with a hazardous waste label. The proper DOT shipping name, UN or NA, EPA waste number, generator information, and accumulation start date on the label must be filled out. The label must be placed on the upper third of the drum.

All drums used to store hazardous waste must be nonleaking and safe to handle. Drums that are rusty, dented, or leaking shall be overpacked. Drums and/or overpacks must be purchased by the Contractor. All drums purchased by the Contractor must be DOT specification numbers 5B, 17E or 17H. The specification numbers are stamped on the bottom of the drum.

Drums filled with hazardous waste shall be inspected weekly for leaks. The Contractor shall obtain from Environmental Management (EM), at an approved storage location, and fill out a generator's inspection checklist each week the drums are in storage (up to 90 days). Completed checklists must be forwarded to EM every Friday until the drums are properly disposed of by the Contractor.

Hazardous waste drums must be stored in an area authorized by EM. In general, the area must have a containment system, be secure, and have signs placed around it that state: "Hazardous Waste. No Trespassing."

Hazardous waste drums can only be stored for 90 days after the accumulation start date. Drums will be kept closed except when adding or removing waste.

Fuel Storage: Fuel storage will be limited to 110 gallons (416 liters). Siting of fuel storage is contingent upon the Environmental Management Office.

Tanks: All tanks used for fuel storage shall have spill containment for 100% of stored fuel. Any tanks needed for chemicals, oils, and other liquids shall have spill containment for 100% of stored product.

Storage: Storage of oils, greases, chemicals, or other liquids will require a fully contained facility for spill prevention and security. A minimum of 40 pounds (18 kg) of absorbent material per 44 gallons (167 liters) of chemical/oil/grease will be on hand for spill control.

Spills: All spills shall be reported by dialing 911 and giving information as to spill location, type of material and estimated time when the spill is contained. The Contractor shall ensure that appropriate personnel protective equipment (PPE) is available to take care of spill cleanup and handling of residue.

Spray Painting: Spray painting shall utilize low-volatile organic chemical (VOC) paint technology or water base paints. Uncontrolled spray painting with high VOC paints will not be allowed.

Contractor Sites: Contractor sites will be maintained at all times. Damage due to erosion and control of fugitive dust will be the responsibility of the Contractor. An on-site review will be conducted by the Project Engineer and the Environmental Management Office (EME) prior to use of any location for Contractor setup. A follow-up program for site overview will be maintained by all parties. Release of the site by the Contractor will be accompanied by a final site review, at which time site deficiencies will be noted. The Contractor will have 14 calendar days to correct deficiencies. Final contract payment will be withheld pending completion of the deficiency list.

Asbestos: The Contractor is cautioned that materials in and around this project may contain asbestos. The government will make every effort to locate and identify all ACM (asbestos containing materials) prior to bidding, however this is not always possible. These materials are often hidden and cannot be discovered until after demolition has begun. The failure of the government to identify all ACM in no way relieves the Contractor from his legal obligation to comply with state and federal regulations regarding the handling of asbestos. If suspected asbestos containing materials are encountered, notify the Project Engineer immediately. Do not continue with any work that will violate any state or federal regulations regarding asbestos. Failure to notify the government promptly, or failure to comply with state and federal regulations will be grounds for termination of this contract. The Contractor will be fully responsible for any and all fines or other penalties resulting from his actions.

If at anytime, an authorized inspector for EM feels that regulatory requirements listed above are not being followed, EM reserves the right to notify the Project Engineer and recommend corrective action.

Ozone Depleting Substances: Banned Ozone Depleting Substances (ODS): Heating, Ventilating and Air Conditioning equipment which use chlorofluorocarbon (CFC) refrigerants are strictly prohibited. This includes but is not limited to R-11, R-12, R-13, R-111, R-112, R-113, R-114, R-115, R-211, R-212, R-213, R-214, R-215, R-216 and R-217. Fire protection systems using Halon 1211, 1301 or 2402 are also prohibited. Other substances banned from use on the worksite include carbon tetrachloride, methyl chloroform and methyl bromide.

1.11 CONTRACTOR BASE IDENTIFICATION CREDENTIALS

The procedure for obtaining base identification passes for Contractor personnel to work on any Air Force Materiel Command (AFMC) base shall be as follows:

- A. The Contractor shall submit a written request on company letterhead stationary, to the EM Security Officer, 00-ALC/EM, specifying:
 1. Contract number.
 2. Location of work site.
 3. Date entry to the Base must begin and contemplated termination date of entry.
 4. Names of Contractor and subcontractor employee requiring access to the Base.
 5. The name of the individual who will submit the Request of Identification Credentials for each employee for whom identification credentials are needed.
 6. Information required on each individual to perform work on McClellan AFB:
 - Full Name
 - Date of Birth
 - Place of Birth
 - Social Security Number
 - Citizenship Status
 7. No foreign nationals may be employed by the Contractor without prior clearance through the Foreign Disclosure Office.
- B. The EM Security Officer will:
 1. Endorse the request.
 2. Attach a copy of the contract cover page and any other pages that provide performance information, such as the need for and duration of access to the work site.
 3. Forward this request to the Security Police, Pass and Identification Office of the installation where the work is to be performed.
- C. The Contractor shall complete all required Request for Identification Credentials forms, furnished by the EM Security Officer, for each of the firm's employees and for each subcontractor employee who must have access to the installation.
- D. The Contractor shall also complete AF Form 25, Visitor/Vehicle Pass or DD Form 2220, DOD Registered Vehicle, for vehicle decals when the Request for Identification Credentials is submitted. To obtain the vehicle decal from the Security Police, Pass and Identification Office, the contract shall produce:
 1. A valid drivers license.
 2. Proof of financial responsibility or insurance which meets the minimum requirements of the contract clause entitled "Required Insurance".
 3. Current vehicle registration.

4. A current safety inspection and emissions sticker will also be required at those installations located in States which require safety inspections.
- E. The Security Police, Pass and Identification Office, upon issuance of appropriate credentials, will furnish the Contractor with one executed copy of the Request for Identification Credentials for each set of credentials issued.
- F. Follow the guidance in AFI 31-209, The Resources Protection Program, when work under this contract requires unescorted entry to controlled areas. The Contractor will request completion of an AF Form 2586, Unescorted Entry Authorization Certificate for each prime contract employee and subcontractor employee for which a controlled area badge is required. Contractor employees with controlled areas badges are required to escort Contractor employees without badges at all times, in and out of controlled areas. All Contractor employees required to work unescorted in a controlled area shall be U.S. citizens.
- G. Contractor personnel requiring unescorted entry to a "Restricted Area" on a military installation, must meet the investigative requirements of AFR 205-32, USAF Personnel Security Program. Contractor employees not meeting these requirements will be provided escort as determined by the Project Engineer in coordination with the Chief, Security Police Division of the military installation involved.

Contractor employees, at all times while on a military installation, shall wear visible Contractor provided identification either as a part of, or attached to, their outer clothing. The identification shall clearly identify the individual as being a Contractor employee.

During performance of the contract, the Contractor shall be responsible for obtaining required identification for newly assigned personnel, and for prompt return of credentials and vehicle registration decals to the Security Police, Pass and Identification Office, for any employee who no longer requires access to the work site.

At the termination or completion of the contract, or upon the expiration of credentials (if any such expirations are specified), the Contractor must be sure that all Base identification credentials and vehicle registration decals for all Contractor and subcontractor employees are returned to the Security Police, Pass and Identification Office.

Prior to submitting an invoice for final payment, the prime Contractor shall obtain a clearance certification from the issuing Pass and Identification Office which states that all Base identification credentials and vehicle decals have been returned or "accounted for". This certification shall be attached to the final invoice at the time of submittal for payment. Failure to comply with these requirements will result in withholding final payment until compliance is effected.

1.13 CONTRACTOR QUALITY CONTROL (CQC)

In conformance with the requirements of CONTRACT CLAUSES clause: "Inspection of Construction," the Contractor shall establish and maintain an effective Quality Control Program.

General: Except for isolated tests or other items of work specified to be performed by the Government, the quality of all work shall be the responsibility of the Contractor. Sufficient inspections and tests of all items of work, including that of subcontractors, to ensure conformance to

applicable specifications and drawings with respect to the quality of materials, workmanship, construction, finish, functional performance, and identification shall be performed on a continuing basis. The Contractor shall furnish qualified personnel, appropriate facilities, instruments and testing devices necessary for the performance of the quality control function. The controls shall be adequate to cover all construction operations both on and off site, shall be keyed to the proposed construction sequence and shall be correlated by the Contractor's quality control personnel.

Preconstruction Planning: The Government will consider an interim CQC plan for the first days of operation. However, within ten (10) calendar days after the date of receipt by him of Notice to Proceed, and prior to starting on-site construction, the Contractor shall meet with the Project Engineer and discuss the quality control requirements. During this meeting the Contractor shall submit for approval his proposed written QC plan which shall include all features outlined below. The proposed plan will be reviewed and the meeting shall develop mutual understanding relative to details of the system, including the personnel, facilities, forms, etc., to be used for the inspections, tests and the administration of the system. Minutes of the meeting shall be prepared by the Contractor and shall be signed by both the Contractor and the Project Engineer. The minutes shall become a part of the contract. No change in the approved plan shall be implemented without written concurrence by the Project Engineer.

Acceptance of CQC Plan: Acceptance of the Contractor's quality control plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC plan and operations as necessary to obtain the quality specified.

Contractor's Proposed (QC) Plan: The Contractor's proposed written quality control plan (for submittal at the mutual understanding meeting) shall include as a minimum:

- A. The quality control organization.
- B. Names, number, and qualification of personnel to be used for this purpose.
- C. Authority and responsibilities of all quality control personnel. Schedule of Use of inspection personnel by types and phase of work.
- D. A list of preparatory and initial inspections to be performed shall be included as part of the Quality Control Program.
- E. A list of all tests specified to be performed and their frequency with proposed test methods including specification paragraph number and names of technicians or qualified testing laboratory to be used.
- F. Location and availability of test facilities and equipment.
- G. Procedures for advance notice and coordination of special inspections and tests where required.
- H. Procedures for reviewing all shop drawings, samples, certificates, or other submittals for contract compliance and certifying them for submission to the Government.
- I. Method of performing, documenting, and enforcing quality control operations of both prime and subcontract work including inspection and

testing both on site and off site. Include proposed forms for approval, and indicate who will prepare, sign, and submit the reports.

- J. Responsibilities and procedures for correcting deficiencies.
- K. A copy of a letter of direction to the Contractor's representative responsible for quality control, outlining his duties and responsibilities, and signed by a responsible officer of the firm.
- L. Method of documenting and tracking deficiencies and corrective actions.

Control of On-Site Construction: The Contractor's quality control program shall include four phases of inspection and tests. The Contracting Officer's representative shall be notified at least 24 hours in advance of each such test.

Preparatory Inspections shall be performed prior to beginning each feature of work on any on-site construction work. Preparatory inspections for the applicable feature of work shall include (i) review of submittal requirements and all other contract requirements with the foremen or supervisors directly responsible for the performance of the work; (ii) check to assure that provisions have been made to provide required field control testing; (iii) examine the work area to ascertain that all preliminary work has been completed; (iv) verify all field dimensions and advise the Project Engineer of any discrepancies; and (v) perform a physical examination of materials and equipment to assure that they conform to approved shop drawings or submittal data and that all materials and/or equipment are on hand.

Initial Inspection shall be performed as soon as work begins on a representative portion of the particular feature of work and shall include examination of the quality of workmanship as well as a review of control testing for compliance with contract requirements.

Follow-up Inspections shall be performed continuously as any particular feature of work progresses, to assure compliance with contract requirements including control testing, until completion of that feature of the work.

Safety Inspections. The Contractor shall perform daily safety inspections of the jobsite and the work in progress to assure compliance with EM 385-1-1 and other occupational health and safety requirements of the contract. Daily Quality Control reports as required under paragraph: REPORTING shall be used to document the inspection and shall include a notation of the safety deficiencies observed and the corrective actions taken. The Contractor shall use his designated Quality Control Staff to perform the required inspections and shall supplement the staff with additional personnel as required. Additional personnel shall be provided at no additional cost to the Government.

Recording Inspection Results: The results of all inspections shall be made a matter of record in the Contractor's Quality Control documentation as required by paragraph DOCUMENTATION below.

Quality Control Staff: The Contractor's job supervisory staff may be used for quality control supplemented as necessary by additional personnel including special technicians for surveillance or testing to provide capability for the controls required by the specifications. The Contractor's staff member designated as the Q.C. Supervisory Engineer for the contract must be a qualified engineer or technician and be able to demonstrate ability to perform correctly the duties required to the satisfaction of the Project Engineer and must be employed full time at the project site whenever contract work is in progress.

Testing Procedure: The Contractor shall perform tests specified or required to verify that control measures are adequate to provide a product which conforms to contract requirements. The Contractor shall procure the services of an industry recognized testing laboratory approved by the Project Engineer, or may establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- A. Verify that testing procedures comply with contract requirements.
- B. Verify that facilities and testing equipment are available and comply with testing standards.
- C. Check test instrument calibration data against certified standards.
- D. Verify that recording forms, including all of the test documentation requirements, have been prepared.

Testing:

- A. Capability Check: The Project Engineer will have the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques.
- B. Capability Recheck: If the selected laboratory fails the capability check, the Contractor will be assessed the actual cost for the recheck as reimbursement to the Government for each succeeding recheck of the laboratory or the checking of a subsequently-selected laboratory. Such costs will be deducted from the contract amount due the Contractor.
- C. Project Laboratory: The Project Engineer will have the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government:
 - 1. Reporting: All inspections and test results shall be recorded daily.
 - 2. Daily Submittals: An approved "Quality Control Daily Report" form shall be reproduced and fully executed to show all inspections and tests and submitted in duplicate to the Project Engineer on the first work day following the date covered by the report.
 - 3. Results of Tests: Triplicate copies of complete results of tests shall be submitted not later than 3 calendar days after performing the test.

Completion Inspections:

Contractor's Quality Control Completion Inspection: Based upon the Project Engineer's concurrence that the work is nearing substantial completion, and at least 14 days prior to prefinal inspection, the Contractor's Quality Control Inspection personnel shall conduct a detailed inspection. The Project Engineer shall be notified of the inspection date in order that he may participate, if he so elects. The work shall be inspected for conformance to plans, specifications, quality, workmanship, and completeness. The Contractor shall prepare an itemized list of work not properly completed, inferior workmanship, or not conforming to plans and specifications. The list shall also include outstanding administrative items such as as-built drawings, O&M Manuals, and spare parts. The list shall be included in the Quality Control documentation and submitted to the Project Engineer with an estimated date

for correction of each deficiency within five (5) working days after conducting this inspection.

Prefinal Inspection: The Contractor's Quality Control Inspection personnel, his superintendent, or other primary management person and the Project Engineer will be in attendance at this inspection. Additional Government personnel, including but not limited to those from the Base Civil Engineer, user groups and major commands may be in attendance. The prefinal inspection will be formally scheduled by the Project Engineer based upon notice from the Contractor. This notice will be given to the Project Engineer at least 14 days prior to the prefinal inspection and must include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining contract work, will be complete and acceptable by the date scheduled for the prefinal inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Project Engineer to bill the Contractor for the Government's additional inspection costs in accordance with the contract clause entitled, "Inspection of Construction." At this inspection the Project Engineer will develop a specific list of incomplete and/or unacceptable work performed under the contract and will subsequently furnish this list to the Contractor. Failure of the Project Engineer to detect and list all incomplete and/or unacceptable work during this inspection will not relieve the Contractor from acceptably performing all work required by the contract documents.

Final Acceptance Inspection: The Contractor's Quality Control Inspection personnel, his superintendent or other primary management person and the Project Engineer will be in attendance at this inspection. Additional Government personnel including, but not limited to, those from the Base Civil Engineer, user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Project Engineer based upon notice from the Contractor. This notice will be given to the Project Engineer at least 14 days prior to the final acceptance inspection and must include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Project Engineer to bill the Contractor for the Government's additional inspection costs in accordance with the contract clause entitled "Inspection of Construction".

Documentation: The Contractor shall maintain current records of quality control operations, activities, and tests performed including the work of suppliers and subcontractors. These records shall be on an acceptable form and indicate a description of trades working on the project, the number of personnel working, the weather conditions encountered, any delays encountered, and acknowledgment of deficiencies noted along with the corrective actions taken on current and previous deficiencies. These records shall include factual evidence that required activities or tests have been performed, including but not limited to the following:

- A. Type, number, and results of control activities and tests involved.
- B. Nature of defects and causes of rejection.
- C. Proposed remedial action.
- D. Corrective actions taken.

These records shall cover both conforming and defective or deficient features and shall include a statement that supplies and materials incorporated in the work comply with the contract. Legible copies of these records shall be furnished to the Project Engineer daily.

Enforcement: The Contractor shall stop work on any item or feature, pending satisfactory correction of any deficiency noted by his quality control staff or by the Project Engineer. Construction shall not proceed upon any feature of work containing uncorrected work. Notations on quality control reports will not be acceptable as a substitution for other written reports by the Contractor if required under CONTRACT CLAUSES clause: "Changes," "Differing Site Conditions," or "Default (Fixed-Price Construction)."

Notification of Noncompliance: The Project Engineer will notify the Contractor of any noncompliance with the foregoing requirements. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his representative at the site of the work, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Project Engineer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

1.14 DAILY WORK SCHEDULES

In order to closely coordinate work under this contract, the Contractor shall prepare for and attend a weekly coordination meeting with the Project Engineer and Using Service at which time the Contractor shall submit for coordination and approval, his proposed daily work schedule for the next two week period. Required temporary utility services, time and duration of interruptions, and protection of adjoining areas shall be included with the Contractor's proposed 2-week work schedule. Coordination action by the Project Engineer relative to these schedules will be accomplished during these weekly meetings.

1.15 SIGN

On commencement of work on this project, the Contractor shall furnish and erect a temporary sign in the location selected by the Project Engineer near the project site. The Contractor shall maintain the sign in good condition through the project construction period and on completion of the project shall remove the sign from the premises. The sign shall be 8-foot wide by 4-foot high, constructed of 3/4-inch exterior high density overlaid plywood. The sign shall state at a minimum, the project name, the Contractor's name, the Project Engineer's name, the contract number, and the user agency. Four permanent warning signs shall be placed at the boundaries of the Construction Site. Signs will be equally spaced and will prohibit digging within the sign boundaries. All sign lettering shall be Dakota Brown on an Adobe backfield. The sign shall be made by an experienced sign painter. Paint shall be exterior type enamel.

1.16 CONTRACTOR FURNISHED EQUIPMENT DATA

At or before 30 days prior to final inspection and acceptance of the work, the Contractor shall submit the data mentioned in the following subclauses.

Equipment List: An itemized equipment list showing unit retail value and nameplate data including serial number, model number, size, manufacturer, etc., for all Contractor-furnished items of plumbing fixtures, laboratory

counters and cabinets, kitchen equipment, mechanical equipment, electrical equipment, and fire protection systems installed under this contract.

Guarantees: A list of all equipment items which are specified to be guaranteed accompanied by a copy of each specific guarantee. For each specific guaranteed item the name, address, and telephone number shall be shown on the list for subcontractor who installed equipment, equipment supplier or distributor, and equipment manufacturer. Completion date of the guarantee period shall correspond to the applicable specification requirements for each guaranteed item.

1.17 PATENT PROTECTION

Contractor shall, at it's sole expense, defend and pay all damages and costs awarded in any proceeding brought against the Government, it's employees and agents, in which it is claimed that the manufacture, sale, or use of any material and equipment or parts thereof furnished hereunder constitutes an infringement of any patent or other proprietary information right, provided Contractor is promptly notified of the commencement of any such proceeding. Contractor's indemnity, as to use, applies only when infringement occurs from the normal use for which such material and equipment were designed. Owner may, at it's option, be represented at any such proceeding.

If such manufacture, sale, or use is held in any such proceeding to constitute an infringement is enjoined, Contractor, at it's own expense, shall either procure for the Government the right to manufacture, sell, and use such material and equipment; or replace same with substantially equal but noninfringing material and equipment; or modify same to make them substantially equal but noninfringing; or remove same and refund the purchase price and transportation and installation costs thereof.

1.18 SECURITY

Any removal of perimeter fencing or traffic flow interruption will be coordinated through SPAI. Removal or breaching of any perimeter security fence must not occur until a temporary fence is in place to provide backup closure. Any construction or remodeling which will affect any enhanced security measures must be coordinated with the Owner/User, Civil Engineering, and Security Police 72 hours prior to commencement of work.

- End of Section -